THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WORKS, TRANSPORT AND COMMUNICATION

CURRICULUM FOR TECHNICIAN CERTIFICATE
(NTA LEVEL 5)
IN
MECHANICAL ENGINEERING

CURRICULUM INFORMATION REPORT

FOR
INSTITUTE OF CONSTRUCTION TECHNOLOGY

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EXECUTIVE SUMMARY

ES1: The Ministry of Works and Transport (MoWT) have established the Institute of Construction Technology in response to national skills demand with respect to construction services. While the construction industry is fast expanding, the supply of qualified personnel with relevant hands on skills at technicians and artisan's levels is declining. The Institute of Construction Technology (ICoT) is expected to fill this gap.

ES2: The rationale for establishing Institute of Construction Technology (ICoT) is hinged in the Ministry's Strategic Plan 2020/2021 – 2025/2026 which aims at strengthening institutions under its jurisdiction, including restructuring its training institutions so as to match with its Construction Industry Policy of 2003, National Development Vision (2025), and other National Strategies and Policies whose mission was to create an enabling environment for the development of a vibrant, efficient and sustainable local industry that meets the demand for the services to support sustainable economic and social objectives.

The Institute of Construction Technology (ICoT) was established in 2017 and became operational on November, 2020 in response to national skills demand with respect to construction services and the declining number of personel with relevant hands on skills at technician's and artisan's levels to cope with expansion of Construction industry and Technological advancement. It is mandated to grant awards on Civil, Mechanical and Electrical Engineering on: -

- Basic Technician Certificate (NTA Level 4)
- Technician Certificate (NTA Level 5) and
- Ordinary Diploma (NTA Level 6).

ES3: Vision, Mission and Functions of ICoT

Vision:

Construction and transport sectors provided with sufficient, competent and hands-on skills using the state of the art technologies for sustainable and socio-economic needs of Tanzania.

Mission:

To provide a conducive training and learning environment that readily and effectively imparts competence based knowledge, skills and abilities for carrying out the construction functions necessary for rapid socio-economic progress of Tanzania.

Functions

The core functions of ICoT will be Training, Research and Consultancy. However, ICoT will also be conducting professional courses to various engineering cadres. Other functions will be as defined in the **Memorandum** of **Association** and **Articles of Association (MEMART)** or any other mandate establishing this institution.

The following are the Core Functions of ICoT;

(i) Training

ICoT will offer long term and short term courses. Long term courses will be for a period of up to 3 years which its assessment shall include (30%) theory and (70%) Practical. Short term courses will be tailor made that will also include labotarory work and practical training.

(ii) Research activities

ICoT will conduct research activities mainly in the area of the construction industry. Both academic staff and students will be involved in the research activities. Outstanding research activities will form a basis for publications to the institute.

(iii) Consultancy activities

ICoT will undertake consultancy activities in collaboration with public and private sector. Income generated from consultancy activities will be used to enhance financial sustainability of the institute.

ES4: The programme has an Industrial Practical Training (IPT) module that is assessed as other modules. IPT is scheduled in the second semester of study and carries 10 Credits.

ES5: The next award of the Technician Certificate Level 5 shall be made to the students who satisfy the following criteria:

(a) Have completed all modules for the award

(b) Have achieved a minimum cumulative Grade Point average (GPA) equivalent to pass.

(c) GPA shall be computed from grades earned by students using the NACTE guidelines.

9.3 Summary of Modules

S/N	CODE	MODULE NAME	SEMESTER	
			I	II
1	GST 05101	Differentiation and Integration	√	
2	GST 05102	Thermal energy, waves and organic compounds	√	
3	GST 05103	Introduction to programming using C language	√	
4	MET 05101	Geometric drawing and Development of Surface	√	
5	MET 05102	Strength of Materials	√	
6	MET 05103	Basic of Engine Management	√	
7	MET 05104	Welding and Metal Fabrication	√	
8	MET 05105	Basic of Machine Elements and Design	√	
9	MET 05106	Engineering Thermodynamics	√	
10	GST 05201	Matrices, complex numbers and vectors		√
11	GST 05202	English Language Skills		√
12	GST 05203	Basics of Entrepreneurship		√
13	GST 05204	Introduction to Networking		√
14	MET 05201	Detail and Assembly Drawing		√
15	MET 05202	Basics of Automotive Diagnosis		√
16	MET 05203	Foundry and Metal Forming		√
17	MET 05204	Fluid Mechanics		√
18	MET 05205	Measurements, Instrumentation and Control Technology		√
19	MET 05206	Industrial Practical Training (IPT)		√